

COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

)	
Notice of Inquiry Re: Risk-Management)	
Techniques to Mitigate Natural Gas)	D.T.E. 01-100
Price Volatility)	
)	

Comments of NSTAR Gas Company

I. Introduction

On December 4, 2001, the Department of Telecommunications and Energy (the “Department”) opened an investigation into the appropriateness of using risk-management techniques to mitigate natural gas price volatility, which was docketed as Notice of Inquiry, D.T.E. 01-100. Set forth below is a brief discussion of the purchasing strategies that NSTAR Gas Company (“NSTAR” or the “Company”) currently utilizes to meet the Company’s gas cost, reliability and supply responsibilities. The Company’s responses to the questions set forth by the Department follow that discussion.

II. General Comments

NSTAR Gas and other natural gas local distribution companies (“LDCs”) serving gas customers in Massachusetts have an obligation to procure reliable, least-cost gas supplies to meet the needs of their customer base. As discussed below, NSTAR’s gas-purchasing strategy is designed to meet that service obligation and produces the optimal result for customers by maintaining a “least-cost” focus, balanced with a level of price stability.

With respect to the purchase of gas commodity, NSTAR meets its service obligation by purchasing gas supply at market-index prices at regular intervals

throughout the year. For example, only a portion of NSTAR's peak-season requirements are met through purchases of gas in the peak-period. NSTAR and other LDCs typically purchase a significant quantity of gas (up to 40 percent) on a levelized basis during the off-peak or summer months to fill underground and on-system liquefied natural gas ("LNG") storage facilities for use in the peak season. Supplies that are needed over and above those kept in storage are generally purchased on an "as-needed" basis, so that customers do not bear the cost of maintaining gas supplies that are not needed in the peak season. As a result, a significant portion of the gas supply needed to meet customer needs in the peak period is purchased in the off-peak months when prices have traditionally tended to be relatively low and stable as compared to the winter season. This purchasing strategy ensures that customers pay no more than market price for their gas supplies with that market price reflecting the average price of the Company's gas purchases made throughout the year. Because the price charged to customers reflects the Company's average cost of gas purchases made throughout the year, customers are provided a level of price stability. In addition, NSTAR provides all customers classes with the opportunity to participate in budget-billing plans to levelize payments across the year.

The use of fixed-price contracts and financial hedging instruments can be effective in minimizing the price volatility associated with the gas purchases that LDCs must make in the peak period. However, the use of these mechanisms does not and cannot ensure that the actual cost of the resulting gas purchases will be consistently lower than what the LDC could have achieved by purchasing its gas supplies throughout the

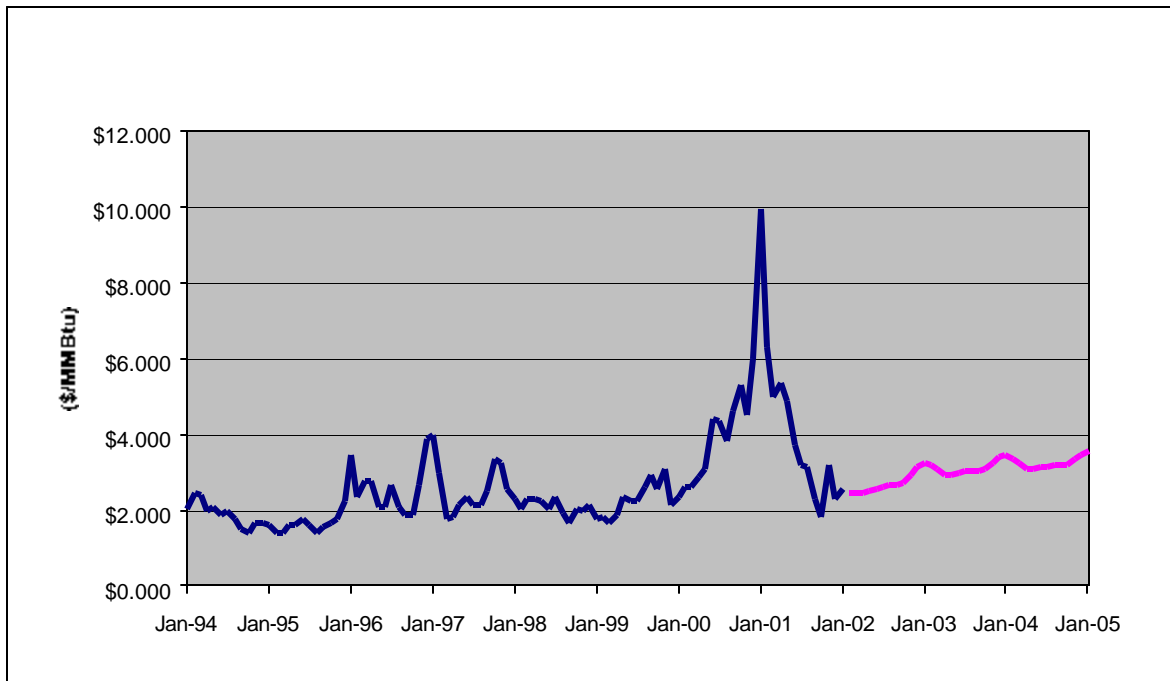
year at market prices. In fact, the use of fixed-price contracts and financial hedging instruments is as likely to result in increased costs as it is to result in decreased costs. This is because hedging activities involve either speculation as to future prices (resulting in costs above market prices if the speculation is wrong) or the purchase of an “insurance policy” to protect against price swings that may occur in the future (requiring additional costs similar to an insurance premium). Thus, the use of fixed-price contracts and financial hedging instruments cannot be relied upon to systematically lower prices below market levels, involve a risk that gas will be purchased at prices above prevailing market prices, and impose costs associated with the use of particular hedging instruments. As a result, the use of these tools is not consistent with least-cost standard purchasing objectives. Thus, if the objective is to implement a purchasing strategy that consistently results in a least-cost combination of gas-supply resources, NSTAR’s current practices are the best approach for achieving that objective.

In addition to ensuring reliable, least-cost gas supplies, NSTAR’s current purchasing practices and pricing policies provide a level of price stability to customers. Because gas is purchased throughout the year to meet peak-period requirements, the price volatility sometimes experienced in the market during the winter period is not fully transferred to customers, thereby mitigating the potential for fluctuating commodity prices to cause changes in the prices charged to customers. As a result, LDCs are able to achieve a level of price stability for customers without taking a position in the market based on speculation about the price of gas in the future and without incurring the costs and risks involved in taking that speculative position. In addition, this strategy provides

the opportunity for competitive marketers to develop products for retail customers that are not offered by the LDC or to offer prices to retail customers that are more favorable than the market-based prices offered by LDCs. Lastly, the seasonal design of the Cost of Gas Adjustment (“CGA”) factor and the availability of levelized or budget-billing plans are important tools in mitigating the impact of gas-cost price volatility for customers while meeting the least-cost purchasing standard.

Today, the market for natural gas at the well-head is fully competitive and gas is bought, sold and traded as a commodity. As a result, natural gas prices fluctuate in response to the level of supply and demand for natural gas existing in the marketplace. Specifically, natural gas prices move freely in response to the level of gas supply available to the market and to the demand for natural gas that is generated as a result of various factors including weather, economic growth and the price trends of alternative fuels. Since, however, gas commodity prices are closely correlated with weather, sharp increases in price volatility are generally not persistent for more than a month or two, which is illustrated in Chart 1, below.

CHART I



For example, during the winter period 2000/2001, NYMEX gas prices fluctuated significantly, increasing from approximately \$6.016/dekatherm as of November 30, 2000 to \$9.997/dekatherm as of January 1, 2001, as a result of unusually cold winter weather across the United States and relatively low levels of storage supplies. However, by February 1, 2001, prices had moderated to approximately \$6.293/dekatherm, and by the end of February, prices were in the \$4.998/dekatherm range.

Despite the drop off in prices by mid-February, the significant and unanticipated cost increases experienced by customers last winter caused many to question whether current gas-purchasing techniques should be modified to achieve a higher level of price

stability. However, it is important to note that the use of hedging techniques in making gas purchases does not eliminate price risk because all gas-purchasing strategies involve price risk. For example, as a result of purchasing gas supplies at market prices, customers are subject to the possibility that prices will be volatile, possibly moving up during critical periods, as was the case last winter. Fixed-price contracts and financial hedging instruments can be used to lessen or eliminate the risk of that type of price volatility, but these tools also involve the risk that customers will pay a price for gas that is higher (perhaps significantly higher) than the prevailing market price at the time that gas is distributed to and used by customers. In addition, the use of such tools may involve additional costs, which essentially represent an insurance premium that would be paid to protect customers from price swings. As a result, the use of fixed-price gas contracts and financial hedging instruments are appropriate price-risk management tools, only when the objective of the purchasing program is to avoid price volatility and not when the objective is to achieve a least-cost supply.

Although NSTAR believes that the current purchasing objective and procurement strategy are optimal for customers, the Department may determine that price stability, and not "least cost" is a desirable and appropriate purchasing objective, which would warrant the additional cost that is associated with further shifting the risk of price volatility away from customers. In that event, the Department could adopt a strategy of having the LDCs establish a price ceiling through the purchase of "call options," which would be in place for the coldest winter months. This would act as a form of "insurance" to protect customers against inordinately high price spikes during the winter period. Like other

types of insurance policies, however, this approach would require the payment of an insurance premium in exchange for that type of price protection.

In summary, NSTAR's current gas-purchasing strategies, combined with a seasonal CGA and budget-billing plans for all customer classes, strike an appropriate balance between the competing objectives of ensuring that customers are provided with reliable, least-cost gas supplies, while affording a level of price stability. NSTAR's purchasing practices also result in the establishment of a transparent, market-based price to facilitate the development of a competitive retail market. In turn, competitive marketers have the opportunity to provide products and services that provide a greater level of price stability to those customers who want to strike a balance that differs from the Company's approach.

III. Responses to Department Questions

1. Should Massachusetts gas utilities be allowed or required to implement a risk-management program to mitigate price volatility for gas customers?

The Department should not require gas utilities to implement a risk-management program that involves the use of fixed-price contracts and financial hedging instruments because the use of such techniques to eliminate price volatility is not consistent with the least-cost standard applied by the Department. These techniques are useful to lessen or eliminate a specified price-volatility risk, but cannot be relied upon to consistently and systematically reduce gas costs below market prices. Hedging activities inevitably involve either speculation as to future prices (resulting in costs above market prices if the speculation is wrong) or require the purchase of an "insurance policy" to protect against price swings that may occur in the future (requiring additional cost similar to an

insurance premium). Therefore, these techniques are useful and appropriate where the designated purchasing objective is to shift the risk of price volatility away from customers, even if this shift results in costs that would not otherwise be incurred by customers, or results in purchases of gas supplies at prices above prevailing market prices.

In addition, the use of these instruments generally requires a high level of market expertise, the ability to gather, compile and analyze market data, and superior forecasting techniques. Even with these resources, there is significant risk, and no guarantee, that a Company can consistently “beat the market.” For those reasons, the use of hedging instruments is best undertaken by competitive market participants who have experience with national markets and specialize in the use of these mechanisms. Since many LDCs lack the resources that would be necessary to use these purchasing techniques effectively and efficiently, it is not appropriate for the Department to require LDCs to establish such a purchasing program. Moreover, the establishment of such programs requires a fundamental shift from the least-cost paradigm to one where the objective is to avoid price volatility. Given that there are mechanisms inherent in the current purchasing strategies of the LDCs that provide a level of price stability while meeting the least-cost standard, this approach is in the best interest of gas customers in Massachusetts.

2. How will risk management by LDCs affect gas unbundling and customer choice in Massachusetts?

One of the building blocks in the development of a competitive retail market for natural gas is the need to provide transparent price information to the emerging marketplace in relation to the prices charged to gas customers of the LDC. Thus, it is

important for LDCs to continue purchasing gas at published market prices so that competitive marketers are able to anticipate what the LDC's cost of gas will be at any given time. Maintaining a price that reflects current market conditions provides competitive suppliers with the opportunity to achieve cost savings for customers, without the entire LDC customer base taking on additional cost and risk associated with the use of hedging instruments. In addition, competitive suppliers often attract customers by offering products and services that the LDC does not, which would include fixed-price options and other gas-cost management services. If LDCs implement comprehensive measures to lessen or eliminate price-volatility or to offer products and services that can be offered by competitive suppliers, it will make it more difficult for competitive marketers to distinguish their prices and products from those of the LDC, which may impede the development of retail competition in Massachusetts.

All gas customers in Massachusetts are currently eligible to convert to transportation service and to purchase gas supplies through a competitive marketer. On the NSTAR gas-distribution system, retail suppliers are serving approximately 86 percent of the Company's industrial load and 34 percent of its commercial load. This means that the market is functioning effectively to provide large customers, whose businesses often have a critical dependency on the availability of low-cost and stable gas prices, with the gas-cost management expertise that these customers need and desire. Moreover, even though recent experience has indicated that marketer interest in residential customers has yet to develop, the Company believes that requiring LDCs to engage in the use of

hedging techniques to mitigate price volatility will complicate the ability of marketers to anticipate changes or trends in LDC pricing.

3. Should gas utilities be limited to specific types of risk-management instruments? If so, what types?

If the Department determines that price stability should be the overarching purchasing objective, then the Department should establish clear objectives and operating parameters within which LDCs would make gas purchases to achieve the intended objective. Given the objective of stabilizing prices, there are several types of hedging instruments that can be used to lessen or eliminate price volatility in the gas purchases made by LDCs. These instruments involve a wide range of complexity and cost.

For example, gas futures contracts are legally binding contracts between two parties that obligate them to buy or sell gas supplies at a certain time in the future, at a certain location and at a certain price, which is determined at the time that the contract is entered into. A standard gas futures contract is for 10,000 MMBtus per month and is traded from one to 72 months out in time on a commodities exchange.¹ Financial hedging instruments include put and call options or price collars that can be used to establish a price floor, a price ceiling or a combination of the two. A purchased option gives the holder the right (but not the obligation) to buy or sell gas in the future at a particular price, in exchange for the payment of a one-time premium.

Because market conditions tend to change very rapidly, and because the use of such instruments requires a high degree of market knowledge and flexibility to adapt the

¹ A forward contract involves the same concept as a futures contract, except that a forward contract is privately negotiated and is not traded on an exchange.

purchasing strategy to those existing market conditions, it would be extremely difficult for the Department to prescribe what types of instruments should be used. Also, given these factors, it could be difficult for the Department to measure “success” and to determine whether the use of a particular instrument was appropriate based on a retrospective review of market conditions and whether the costs that may have been incurred in using the instrument were warranted.

4. Should there be a percentage volume of gas that LDCs would be allowed to hedge?

If the Department were to determine that the overriding purchasing objective should be price stability, then the Department would need to establish a framework within which the LDC would operate to achieve the Department’s identified goals, which could include volume limitations. As an initial matter, since LDCs already purchase as much as 50 percent of peak-day requirements and 40 percent of peak season requirements in the summer for injection into storage or as LNG, hedging instruments would generally be applied to volumes associated with flowing pipeline supplies needed in the peak season.

At the same time, it is important to note that, it will be difficult to apply a generic standard with respect to pinpointing the volume of gas subject that should be involved in a hedging program, because the appropriate volume may differ in light of market conditions and the structure of an LDC’s resource portfolio. For example, although hedging against price volatility may have some attraction when prices in the future are anticipated to rise, the same is not true when prices in the future are anticipated to drop. Since prices are changing all the time and since dramatic price swings tend to be

relatively short-lived, it may be difficult to establish precise volume parameters that would be suitable for all companies at all times.

5. What should the core objectives of a hedging program be (e.g., least cost, price stability)?

NSTAR currently utilizes “least-cost” purchasing strategies to meet its public-service obligation. As discussed above, the use of fixed-price contracts and financial hedging instruments is not consistent with the least-cost standard because such hedging tools often involve additional costs and do not result in gas prices that are consistently below market over the course of time. Therefore, as a regulatory matter, the core objective of a hedging program must be to stabilize prices for customers by reducing or eliminating the price volatility associated with gas purchases.. However, as experienced last winter, sudden and significant increases in gas costs are difficult for many customers to bear, especially when such increases would typically coincide with a customer’s need to use gas for heating purposes during cold weather. Therefore, the Department could determine that insuring against short-lived, but precipitously high gas prices should be a purchasing objective. This would require a determination that there is a value in protecting customers from extremely high prices and in allowing companies to insure against such an event through the purchase of call options or some other similar mechanism to establish a price ceiling. This would also require a determination at the the appropriate price ceiling and the appropriate level of cost that should be incurred to achieve that price ceiling.

A regulatory objective of “least-cost” gas supplies cannot be ensured through a hedging program because the use of hedging tools requires either speculation about future

market price trends or additional costs in the form of premiums, which are necessary to shift the risk of price volatility from customers to another entity. NSTAR's current purchasing strategy represents the optimal approach to ensure a least-cost gas supply (balanced with reliability needs), while providing a level of price stability.

6. How will the Department assess risk-management programs? What benchmarks should be used to measure a risk management program's performance?

Determining whether a particular hedging program has been successful is a significant issue in establishing a gas-purchasing program that would involve the use of hedging instruments to stabilize prices. If the Department were to determine that the overriding purchasing objective should be price stability rather than least cost, then the Department would need to establish a framework, which should include a pre-approval process for hedging proposals. As discussed above, it would be difficult and inappropriate for the Department to prescribe the type of instruments to be used or the specific volumes to be hedged, because this type of purchasing strategy requires a high level of market expertise and flexibility to develop strategies in light of then-existing market conditions. One approach may be to establish a benchmark price or price range that would represent a pricing target against which the cost of hedged purchases could be measured. This type of system also presents a number of issues to be resolved because it either requires the Department to make a determination as to a "reasonable" price or price range, or it requires the Department to evaluate hedged purchases against market indices, which requires a host of assumptions about the gas purchases that would have been made

absent the hedging program and the market indices that would have governed those purchases.

7. What standard of review should the Department apply to utilities' initial risk-management programs?

To implement a price-stabilization obligation, the Department should establish clearly defined objectives and a pre-approval process to evaluate LDC hedging proposals. In that process, the Department would evaluate the proposed program on the basis of whether it is reasonably designed to achieve the Department's objectives.

8. What types of costs are associated with risk management? Should LDCs be allowed to recover these costs? If so, please explain how.

There are essentially two categories of costs that may be incurred as a result of using hedging instruments to reduce or eliminate price volatility: (1) costs that are analogous to insurance premiums, which must be paid to insure that a certain price is available at a certain time in the future; and (2) actual gas costs that are incurred by customers because the hedged price produces a higher total cost for customers than they would have experienced under a traditional "least-cost" purchasing strategy. The total amount of these two categories of costs would vary greatly depending on a number of factors. For example, costs associated with consumption of gas at a total cost that is in excess of the total cost that would be incurred purchasing at prevailing market prices would be a direct result of the quantity of gas that must be consumed at the relatively higher price.

With respect to premiums associated with the use of financial hedging instruments, a general rule of thumb indicates that the premiums tend to increase where

the target price is relatively close to the existing market price, and also where the time frame is extended. Conversely, the premium associated with establishing a price ceiling that is well above anticipated prices would be relatively less expensive than trying to establish a narrow range that reflects current market prices of current expectations of future prices. These costs are illustrated in Chart II, below:

CHART II

Period	Strip Price (\$/MMBtu)	At-the-Money		\$1.00 OTM		Zero Cost Collar	
		Call Strike	Premium	Call Strike	Premium	Call Strike vs. Put Strike	
April - October 2002	\$2.85	\$2.85	\$0.42	\$3.85	\$0.18	\$3.85	\$2.37
April - October 2003	\$3.18	\$3.18	\$0.57	\$4.18	\$0.30	\$4.18	\$2.69
Nov. 2002 - March 2003	\$3.30	\$3.30	\$0.65	\$4.30	\$0.38	\$4.30	\$2.82
Nov. 2003 - March 2004	\$3.50	\$3.50	\$0.67	\$4.50	\$0.40	\$4.50	\$3.01
February - March 2002	\$2.76	\$2.76	\$0.31	\$3.76	\$0.09	\$3.76	\$2.23
Q2'2002	\$2.77	\$2.77	\$0.36	\$3.77	\$0.12	\$3.77	\$2.27
Calendar 2002	\$2.89	\$2.89	\$0.41	\$3.89	\$0.18	\$3.89	\$2.44
Calendar 2003	\$3.27	\$3.27	\$0.61	\$4.27	\$0.34	\$4.27	\$2.78
Calendar 2004	\$3.39	\$3.39	\$0.65	\$4.39	\$0.40	\$4.39	\$2.92

(December 28, 2001)

As illustrated above in Chart II, given a NYMEX strip price for gas delivered from April 2003 through October 2003 of \$3.18 as of December 28, 2001, the premium associated with purchasing a call option to ensure that gas purchased during that delivery period is no more than the \$3.18 strip price is \$0.57/MMBtu. A call option purchased on for gas deliveries between April 2003 through October 2003 at a price that is no more than \$1.00 over the quoted strip price as of \$3.18 (or \$4.18) would have a relatively

lower premium of \$0.30/MMBtu. Chart II also shows that a zero-cost collar could be acquired for gas purchased during this period, which would result gas to being purchased at the market price during the period April 2003 through October 2003, as long as the market price was between \$2.69 and \$4.18. If the market price was to exceed \$4.18 during that time period, the Company would pay no more than \$4.18, and if the price went below \$2.69, the Company would be required to pay no less than \$2.69. This same analysis is illustrated for the time period April through October 2002, which indicated that the premiums for all options would be relatively lower. This reflects the fact that the purchasing horizon is closer in time and there is relatively more knowledge in the market about anticipated price changes.

If the Department were to establish price stability as a purchasing objective, then costs associated with achieving that purchasing objective should be borne by customers because customers would be receiving the benefit of the price stability. This outcome is no different under the current "least-cost" purchasing program where customers bear the cost of market prices when prices are increasing (and the benefit of cost reductions when prices are declining).

9. Should an incentive mechanism be used in conjunction with a risk management program? If so, please explain how this mechanism should be structured?

If the Department were to establish price stability as the overriding purchasing objective, then an incentive mechanism could be employed, but is not necessary. Under the Department's current framework (which has a least-cost objective), a company has the obligation to minimize gas costs and shoulders the risk of non-recovery of gas costs

(which can be substantial) where purchases are found to be imprudent. If the Department were to change its purchasing objectives to focus on price stabilization and to institute a pre-approval process, then the LDC would be equally obligated to undertake purchases within the parameters of the Department's announced policy and would be subject to the risk of non-recovery of gas costs where purchases are found to be imprudent. However, if an LDC is proposing to profit from a proposed purchasing program, then it would be appropriate to establish a risk-sharing structure.